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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/803,582      | 03/17/2004  | Chiyoshi Sasaki      | KAW-0049            | 6139             |

23413 7590 03/13/2007  
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| EXAMINER |
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PAPE, ZACHARY

|          |              |
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| ART UNIT | PAPER NUMBER |
|----------|--------------|

2835

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE  | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS                               | 03/13/2007 | PAPER         |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/803,582

Applicant(s)

SASAKI, CHIYOSHI

Examiner

Zachary M. Pape

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 and 9-18 is/are pending in the application.
- 4a) Of the above claim(s) 1-7 and 16-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/12/2007 has been entered.

### ***Claim Objections***

2. Claims 9-15 are objected to because of the following informalities:

Claim 9 recites, "curved portion" which is incorrect.

Claims 10-15 are objected to for at least the reason that they include the limitations of claim 9.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 9-15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which

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was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 9 recites, "metal heat dissipating fins each having elasticity which is linear or bent along a specific configuration" which is unclear to the Examiner. Specifically the Examiner does not understand how elasticity is linear or bent. For the purposes of examination the limitation has been considered to mean that the fins are either linear or bent.

Claim 9 further recites, "at least one mechanically deformed portions of said metal shield plate to be fixed with said heat dissipating portions which are inserted into said respective slits and fixed thereto" which is unclear to the Examiner. Specifically the Examiner does not understand what the mechanically deformed portions of said metal shield plate are, nor how the portions are fixed with said heat dissipating portions, nor does the Examiner understand what is being, "fixed thereto". For the purposes of examination the limitations have been considered to mean that the fins (4) have mechanically deformed portions (17) which fix the heat dissipating portions to the metal shield plate (See Fig 9, see also Page 12 of the present specification).

Claims 10-15 are rejected for at least the reasons that they incorporate all the limitations of claim 9.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9-15, as best can be understood by the Examiner, are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al. (US 6,357,514 – hereinafter, “Sasaki”) in view of Zeighami et al. (US 2003/0183371 – hereinafter, “Zeighami”) and further in view of Jordan et al. (US 5,038,858 – hereinafter, “Jordan”).

With respect to claim 9, Sasaki teaches a heat sink comprising: a heat dissipating portion (Comprising 21, 22) comprising a plurality of plate-like metal heat dissipating fins (21) each having elasticity which is linear or bent along a specific configuration (See Fig 8) and a heat receiving portion (22); a metal shield plate (1) having a plurality of slits (12) including linear (See Fig 7 which illustrates that the slits are linear) or curved portion into which said respective heat dissipating fins are inserted along said slits (See Fig 8) and press-connected to said metal shielding plate by forming a concave portion (11) on both sides of said slits (Wherein the concave portions 11 press onto the base portion 22 of the heat dissipating portion thereby press-connecting the fins (21) to the plate (1)). Sasaki is silent as to a fin fixing member to transfix said plurality of metal fins and at least one mechanically deformed portions of said metal shield plate to be fixed with said heat dissipating portions which are inserted into said respective slits and fixed thereto. Zeighami teaches a plurality of heat sink fins (502)

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transfixed by a fin fixing member (500). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Zeighami et al. with that of Sasaki et al. to facilitate better and more even cooling of the fins. With respect to the mechanically deformed portions, Jordan teaches fins (12) which have mechanically deformed portions (19 – see Column 2, Lines 54-57)) that allow the fin to further fixed attach to a plate (10 – see Column 3, Lines 5-14). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Jordan with that of Sasaki to provide a means of attaching fins to a plate without using adhesives, and to provide increased thermal heat transfer between the plate and the fins (Column 1, Line 53 – Column 2, Line 3).

With respect to claim 10, Sasaki et al. further teaches that each of said slits has a substantially same width corresponding to a thickness of said heat dissipating portion across the metal plate, and each of said slits extends toward respective one end portions of said metal shield plate in a longitudinal direction with remaining portions paralleled each other (As illustrated in Fig 4).

With respect to claim 11, Sasaki et al. further teaches that each of said slits has a substantially same width corresponding to a thickness of said heat dissipating portion across the metal plate, and each of said slits spreads toward respective both end portions of said metal shield plate in a longitudinal direction with center portions paralleled each other (As illustrated in Fig 4).

With respect to claim 12, Sasaki et al. further teaches that each of said slits has a substantially same width corresponding to a thickness of said heat dissipating portion

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across the metal plate, and each of said slits is parallel each other in a longitudinal direction (As illustrated in Fig 4).

With respect to claim 13, Sasaki et al. further teaches that each of said heat receiving portion and said heat dissipating portion of said fin constitute a square flat plate portion (As illustrated in Fig 4).

With respect to claim 14, Sasaki et al. further teaches that the plurality of fins are placed in parallel in such a manner that respective heat receiving portions (22) of said fins form a single heat receiving face (That which is facing the joining portion (3)) as a whole.

With respect to claim 15, Zeighami et al. further teaches that the fin fixing member (500) comprises a heat pipe.

### ***Response to Arguments***

5. Applicant's arguments filed 2/12/2007 have been fully considered but they are not persuasive.

With respect to the Applicant's remarks to claim 9 that, "Sasaki does not teach any concave portions on the sides of slits", the Examiner respectfully disagrees. The Applicant is directed to present office action Fig 1 below which clearly discloses that the Sasaki reference teaches concave portions on the sides of slits as claimed.

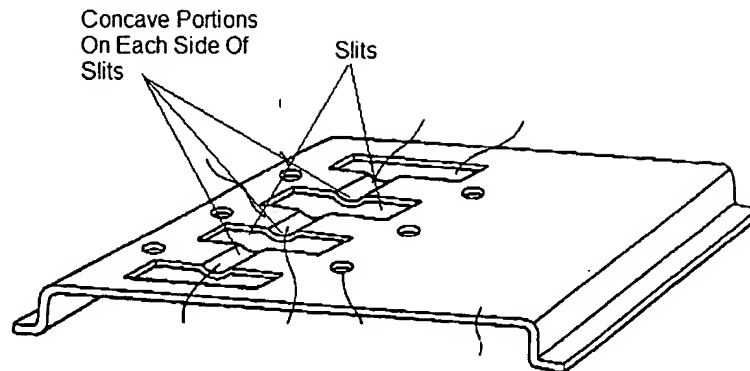


Fig 1

With respect to the Applicant's remarks to claim 9 that, "this specifically claimed metal shielding plate 9 is different from base member 1 of Sasaki cited by the USPTO", the Examiner respectfully disagrees. As detailed in the rejection above, the metal shield plate (1) of Sasaki is the same as the claimed metal shield plate as per the limitations of claim 9. The Examiner respectfully notes that the Applicant has agreed that the plate (1) of Sasaki does perform the same function (See present remarks, specifically "the mountain shaped fin is fixed to a base plate that can function as a shielding plate") and further allows the Sasaki reference to read upon all the additional limitations in the claim (I.E. the plate (1) has slits (12) with concave portions (11) etc..). For this reason the plate of Sasaki is not patently distinguishable from the plate presented by the Applicant.

### **Conclusion**

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zachary M. Pape whose telephone number is 571-272-2201. The examiner can normally be reached on Mon. - Thur. (7:00am - 5:30pm).



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached at 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ZMP

**BORIS CHÉRVINSKY**  
**PRIMARY EXAMINER**

*Boris L. Chervinsky*  
3/8/17